CLAIMS

1   1. An integrated optic polarization converter comprising a plurality of core layers
2   used to approximate a gradually twisted waveguide and therein adiabatically
3   transform a propagating mode from an initial polarization state to a different final
4   polarization state.

1   2. The polarization converter of claim 1 wherein at least one of said core layers is
2   tapered linearly along the length of the polarization converter.

1   3. The polarization converter of claim 1 wherein at least one of said core layers is
2   tapered non-linearly along the length of the polarization converter.

1   4. The polarization converter of claim 1, wherein said plurality of core layers
2   comprises two core layers.

1   5. The polarization converter of claim 1, wherein said plurality of core layers
2   comprises three core layers.

1   6. The polarization converter of claim 1, wherein a certain number of said core
2   layers is maintained constant along the length of the polarization converter.

1   7. The polarization converter of claim 1, wherein said core layers are separated
2   laterally along the length of the polarization converter.

1   8. A method of using an integrated optic polarization converter, said method
2   comprising:
3   receiving an initial polarization state; and
4   forming a plurality of core layers to approximate a gradually twisted
5   waveguide and therein adiabatically transform a propagating mode from said
6   initial polarization state to a different final polarization state.

1   9. The method of claim 8 wherein at least one of said core layers is tapered linearly
2   along the length of the polarization converter.

1   10. The method of claim 8 wherein at least one of said core layers is tapered non-
2   linearly along the length of the polarization converter.

1   11.   The method of claim 8, wherein said plurality of core layers comprises two
2   core layers.

1   12.   The method of claim 8, wherein said plurality of core layers comprises three
2   core layers.

1   13.   The method of claim 8, wherein a certain number of said core layers is
2   maintained constant along the length of the converter.

1   14.   The method of claim 8, wherein said core layers are separated laterally along
2   the length of the polarization converter.